

What is Claimed is:

1. A purified polypeptide comprising an amino sequence selected from the group consisting of:
  - SEQ ID NO:2;
  - a variant of SEQ ID NO:2;
  - a fragment of SEQ ID NO:2;
  - an amino acid sequence encoded by an isolated polynucleotide comprising a nucleotide sequence selected from the group consisting of:
    - SEQ ID NO:1;
    - a variant of SEQ ID NO:1; and
    - a fragment of SEQ ID NO:1.
2. The purified polypeptide of claim 1 wherein the polypeptide is an agonist or antagonist that specifically binds to NFAT activating receptors and inhibits or activates the expression or action of the receptors.
3. The purified polypeptide of claim 2 wherein the polypeptide is an antagonist selected from the group consisting of soluble forms of NFAT activating receptors and soluble polypeptides derived from the extracellular domains of NFAT activating receptors that are capable of binding the NFAT activating receptor.
4. The purified polypeptide of claim 3 comprising an amino acid sequence selected from the group consisting of amino acids 43 to 150 of SEQ ID NO:2 or antagonist fragments thereof.
5. The purified polypeptide of claim 2 wherein the agonist or antagonist is an antibody.
6. The purified polypeptide of claim 5 wherein the antibody is selected from the group consisting of polyclonal, monoclonal, humanized, human, bispecific, and heteroconjugate antibodies.
7. The purified polypeptide of claim 5 wherein the antibody is a monoclonal antibody.
8. An isolated polynucleotide comprising a nucleotide sequence selected from the group consisting of:
  - SEQ ID NO:1;
  - a variant of SEQ ID NO:1;
  - a fragment of SEQ ID NO:1;
  - a nucleotide sequence that encodes a polypeptide having the amino acid sequence selected from the group consisting of:
    - SEQ ID NO:2;
    - a variant of SEQ ID NO:2;
    - a fragment of SEQ ID NO:2.
9. The isolated polynucleotide of claim 8 comprising a nucleotide sequence that encodes a polypeptide having an amino acid sequence selected from the group consisting of amino acids 43 to 150 of SEQ ID NO:2 or antagonist fragments thereof.
10. An expression vector comprising the nucleotide sequence of claim 8.
11. An isolated host cell selected from the group consisting of a host cell comprising the expression vector of claim 10; a host cell comprising the nucleotide sequence of claim 8; and a host cell comprising the nucleotide sequence of claim 9.
12. A screening method for identifying NFAT activating receptor agonists and antagonists, comprising:
  - exposing a NFAT activating receptor to a potential NFAT agonist/NFAT antagonist; and

- determining whether the potential agonist/antagonist binds to the receptor.
13. A screening method for determining whether pharmaceuticals are likely to cause undesirable side effects associated with reducing or increasing cytokine and cellular receptor production when administered to an animal for the desired indication, comprising:
    - exposing NFAT activating receptors to a pharmaceutical; and
    - determining whether the pharmaceutical binds to the receptors or mimics the biological function of the receptor ligand by causing a change in cytokine production.
  14. A method for blocking or modulating the expression of a cellular NFAT activating receptor by interfering with the transcription or translation of a DNA or RNA polynucleotide encoding the NFAT activating receptor comprising exposing a cell capable of expressing a NFAT activating receptor to a molecule that interferes with the transcription or translation of a DNA or RNA polynucleotide encoding the NFAT activating receptor.
  15. The method of claim 14 wherein the molecule is selected from the group consisting of antisense nucleotides, RNAi nucleotides, and ribozymes that interfere with the proper transcription or translation of a DNA or RNA polynucleotide encoding the NFAT activating receptor.
  16. The method of claim 14 wherein the molecule is an antisense nucleotide that interferes with the proper transcription or translation of a DNA or RNA polynucleotide encoding the NFAT activating receptor.
  17. A method for diagnosing the predisposition of a patient to develop diseases caused by the unregulated expression of cytokines, comprising:
    - collecting a cell, tissue, or body fluid sample known to contain few if any NFAT activating receptors from a patient;
    - analyzing the tissue or body fluid for the presence of NFAT activating receptor in the tissue; and
    - predicting the predisposition of the patient to certain immune diseases based upon the presence of NFAT activating receptor in the tissue or body fluid.
  18. A method for diagnosing the predisposition of a patient to develop diseases caused by the unregulated expression of cytokines, comprising:
    - collecting a cell, tissue, or body fluid sample known to contain a defined level of NFAT activating receptors from a patient;
    - analyzing the tissue or body fluid for the amount of NFAT activating receptor in the tissue; and
    - predicting the predisposition of the patient to certain immune diseases based upon the change in the amount of NFAT activating receptor in the tissue or body fluid compared to a defined or tested level established for normal cell, tissue, or bodily fluids.
  19. A method for preventing or treating NFAT protein mediated diseases in a mammal comprising administering a disease preventing or treating amount of a NFAT activating receptor agonist or antagonist to the mammal.
  20. The method of claim 19 wherein the NFAT activating receptor agonist or antagonist is an antibody.
  21. A method for producing an antibody that binds to NFAT activating receptors, comprising a method selected from the group consisting of:
    - using isolated NFAT activating receptors or antigenic fragments thereof as an antigen;
    - using host cells that express recombinant NFAT activating receptors as an antigen; and

using DNA expression vectors containing the receptor gene to express the receptor as an antigen for producing antibodies.

22. The antibody produced using the method of claim 21.
23. The antibody of claim 22 selected from the group consisting of polyclonal, monoclonal, humanized, human, bispecific, and heteroconjugate antibodies.
24. A diagnostic method for detecting NFAT activating receptors expressed in specific cells, tissues, or body fluids, comprising:
  - exposing cells, tissues, or body fluids or their components to the antibodies of claim 22; and
  - determining if the cells, tissues, or body fluids or their components bind to the antibody.
25. A method for isolating and purifying NFAT activating receptors from recombinant cell culture, contaminants, and native environments, comprising:
  - exposing a composition containing NFAT activating receptors and contaminants to an antibody capable of binding to the receptors;
  - allowing the NFAT activating receptors to bind to the antibody;
  - separating the antibody-receptor complexes from the contaminants; and
  - recovering the NFAT activating receptors from the complexes.
26. The method of claim 25 wherein the antibody is an antibody of claim 22.
27. A method for inducing tolerance in a mammal that may experience an unwanted immune response comprising administering a NFAT activating receptor antagonist to the patient in amounts sufficient to inhibit the translocation of NFAT protein into the cell nucleus and its subsequent interaction with the transcription factor activator protein 1.
28. The method of claim 27 wherein the antagonist is an antibody that binds to a NFAT activating receptor and prevents NFAT proteins from translocating to the nucleus and interacting with AP-1.
29. The method of claim 26 wherein the antibody is an antibody of claim 22.
30. A transgenic knockout animal whose genome comprises a heterozygous or homozygous disruption in its endogenous NFAT activating receptor gene that suppresses or prevents the expression of biologically functional NFAT activating receptor proteins.